

Building Programs with Diverse Learning Principles Materials and Resources

Presenters:

Kelly Bahiraei, Assistant Director of Faculty Development, Vanderbilt University
kelly.bahiraei@vanderbilt.edu

Grover Cleveland, Principal, Lessons for Sharks LLC, grover@lessonsforsharks.com

Carole Deeter, Professional Development Manager, Thompson Hine LLP,
carole.deeter@thompsonhine.com

12 Principles of Multimedia Learning: Ruth Colvin Clark & Richard E. Mayer

1. **Coherence Principle:** People learn better when extraneous words, pictures, and sounds are excluded rather than included.
2. **Signaling Principle:** People learn better when cues that highlight the organization of the essential material are added.
3. **Redundancy Principle:** People learn better from graphics, narration, and on-screen text.
4. **Spatial Contiguity Principle:** People learn better when corresponding words and pictures are presented near rather than far from each other on the page or screen.
5. **Temporal Contiguity Principle:** People learn better when corresponding words and pictures are presented simultaneously rather than successively.
6. **Segmenting Principle:** People learn better from a multimedia lesson that is presented in user-paced segments rather than as a continuous unit.
7. **Pre-training Principle:** People learn better from a multimedia lesson when they know the names and characteristics of the main concepts.
8. **Modality Principle:** People learn better from graphics and narrations than from animation and on-screen text.
9. **Multimedia Principle:** People learn better from words and pictures than from words alone.
10. **Personalization Principle:** People learn better from multimedia lessons when words are in conversational style rather than formal style.
11. **Voice Principle:** People learn better when the narration in multimedia lessons is spoken in a friendly human voice rather than a machine voice.
12. **Image Principle:** People do not necessarily learn better from a multimedia lesson when the speaker's image is added to the screen.

Andragogy: Malcolm Knowles

Assumptions of Adult Learners

1. **Self-Concept:** Adults move from being dependent on others to self-direction as they mature.
2. **Experience:** Adults gain experience as they grow that, in turn, becomes a valuable tool in learning.
3. **Readiness to Learn:** The priorities of adults shift as they begin to increasingly value and therefore are more interested to learn about their role in society.
4. **Orientation to Learning:** Adults change their perspectives on learning as they grow, moving from procrastination to immediate application and from subject interest to problem-solving.
5. **Motivation to Learn:** Adults move from extrinsic towards intrinsic motivation as they grow and mature.

Principles of Andragogy

1. Adults need to be involved in the planning and evaluation of their instruction.
2. Experience (including making mistakes) provides the basis for the learning activities.
3. Adults are most interested in learning subjects that have immediate relevance and impact to their job or personal lives.
4. Adult learning is problem-centered rather than content-oriented.

Ideas for Increasing Engagement & Knowledge Transfer

1. **Interactivity:** Build in as much as possible to break up lectures. It can be as simple as polls, voting, or asking the audience questions. These work virtually or in person.
2. **Breakout groups:** Provide prompts and send learners to breakout groups or table discussions. Ask them to report back on what they discussed.
3. **Use realistic examples:** Find case studies or create hypotheticals for learners to apply the lessons learned. To maximize the benefits of the application & practice and keep their efforts relevant to their work, make them realistic.
4. **Flip the classroom:** Assign segments or topics to learners to present to the group.
5. **Give pre- or post-work:** Send questions for consideration before the program, ask learners to prepare something, or give them an assignment to complete after the program. Make sure to include an opportunity for feedback on the work they complete so it is a valuable use of their time.
6. **Get them on their feet:** Use practice or role-playing opportunities for them to test out what they learn. Use peer feedback so they can learn from each other.
7. **Give them feedback:** A common theme here is feedback. Throughout your program, give them feedback on their practice, questions, comments, and examples to reinforce their learning. Use peer feedback for social learning opportunities.
8. **Provide resources:** Circulate articles, materials, checklists, and other resources to reinforce the knowledge shared so they can continue their learning.

Teaching, Learning, and Engagement Techniques

1. Online Learning

- a. Clearly articulate learning outcomes
- b. Present information in multiple ways and consider accessibility of your materials from the start – tools can include online workspaces like Mural or Kahoot
- c. Use resources like a chat mod to help steer learning and address questions in real time

2. In-Person Learning

- a. Identify motivations for attending and articulate learning outcomes
- b. Breakout groups to physically separate learning spaces
- c. Liberating Structures Philosophy: Impromptu Networking, Troika Consulting, Fishbowl can work well in adult learning
- d. Recognize physical space needs (i.e., breaks / internet availability)

3. Hybrid Learning

- a. Consider the principles of Universal Design for Learning: multiple means of engagement; representation; and action and expression
- b. Create an inclusive learning environment: do all online learners break out together? Or one per in-person group? Anticipate needs ahead of time.

Sources, References, Learn More:

- *e-Learning and the Science of Instruction: Proven Guidelines for Consumers and Designers of Multimedia Learning* by Ruth Colvin Clark and Richard E. Mayer
- *How Learning Works: Seven Research-Based Principles for Smart Teaching* by Susan A. Ambrose, Michael W. Bridges, Michele DiPietro, Marsha C. Lovett, and Marie K. Norman
- *Effective Online Teaching: Foundations and Strategies for Student Success* by Tina Stavredes
- <https://waterbearlearning.com/mayers-principles-multimedia-learning/>
- <https://www.emergingedtech.com/2017/06/mayers-12-principles-of-multimedia-learning-are-a-powerful-design-resource/>
- <https://educationaltechnology.net/andragogy-theory-malcolm-knowles/>
- <https://elearninginfographics.com/adult-learning-theory-andragogy-infographic/>
- <https://www.instructionaldesign.org/theories/andragogy/>
- <https://elearningindustry.com/the-adult-learning-theory-andragogy-of-malcolm-knowles>
- <https://www.liberatingstructures.com/fs5>
- <https://www.insidehighered.com/advice/2020/08/26/strategies-teaching-online-and-person-simultaneously-opinion>
- <https://cft.vanderbilt.edu/>
- <https://dcal.dartmouth.edu/resources/teaching-learning-foundations/universal-design-education>
- <http://www.flynnresearchgroup.com/edi-teaching-learning>